From glowbugs@theporch.com Fri Apr 5 09:13:19 1996
Return-Path: glowbugs@theporch.com
Received: from uro (localhost.theporch.com [127.0.0.1]) by uro.theporch.com
(8.7.5/AUX-3.1.1) with SMTP id JAA21175; Fri, 5 Apr 1996 09:07:04 -0600 (CST)
Date: Fri, 5 Apr 1996 09:07:04 -0600 (CST)
Message-Id: <199604051507.JAA21175@uro.theporch.com>
Errors-To: ws4s@midtenn.net
Reply-To: glowbugs@theporch.com
Originator: glowbugs@theporch.com
Sender: glowbugs@theporch.com
Precedence: bulk
From: glowbugs@theporch.com
To: Multiple recipients of list <glowbugs@theporch.com>
Subject: GLOWBUGS digest 151
X-Listprocessor-Version: 6.0c -- ListProcessor by Anastasios Kotsikonas
X-Comment: Please send list server requests to listproc@theporch.com
Status: O

GLOWBUGS Digest 151

Topics covered in this issue include:

Date: Thu, 4 Apr 1996 11:45:56 -0500 (EST)
From: rdkeys@csemail.cropsci.ncsu.edu
To: boatanchors@theporch.com, glowbugs@theporch.com
Cc: rdkeys@csemail.cropsci.ncsu.edu ()
Subject: BA/GB Fist Function Report
Message-ID: <9604041645.AA104299@csemail.cropsci.ncsu.edu>

Well, last night was a Happy HeathKit night, it seems..... more duelling
HotWater 16's than have been 'eard in many a moon. Great going fellers!

This weekend ought to be quite good. Soo...... grapples ye up yer tin cans atop yer noggins, an areadys yer keys at the fore.... cuz de BA/GB Fist Function is a fine place to rattle an' bang on the ol' brass monkey!

QRG 7025+ahair QTR 0100/0200Z

QRG 3579.545 QTR 0300/0400/0500/0600Z

Call: CQ BA/GB DE yourcall K

The later into the wee small hours ye be on watch, the better the band she be.

Rumored it is, byes the bye, that there be duelling ArcusFivus beasties about, an' some be a'swearin' there be BCus-375us about, an' others a'swear's they 'eard Henrietta Hartley an' her fine stable o' ladies about on the ether..... Wouldst be a fine party it seems, on the ether tonite. So, plys ye the ether seas, an may ye all have faire windes an' followin' seas this fine weekend burning fine firebottles, an' swattin' fine glowbugs, an' generally carousin' as it be, on the BA/GB watch, wid yer fine rigs in tow...... Sees ye there, mateys!

73/ZUT DE NA4G UP

Date: Thu, 4 Apr 1996 08:33:24 -0700
From: "Don Ehrlich" <dehrlich@eldec.com>
To: glowbugs@theporch.com
Subject: QRP-AM RIG Info Needed
Message-ID: <9604041634.AA10069@eldec.com>

Re: Andy Wallace's note about the 6AQ5 AM Rig.

I have an SASE waiting for the first one to offer me info about the 6AQ5 rig on a baking tin. It sounds like just the rig I have been wanting to build.

Actually, I did build such a thing when I was a kid in the '50s .... maybe I will get it right this time.

Don Ehrlich   K7FJ   ex-W7VLH   Seattle

Date: Thu, 4 Apr 96 11:56:55 EST
From: Andy Wallace <wallace@mc.com>

To: glowbugs@theporch.com
Subject: Colorbursting my balloon!
Message-ID: <9604041656.AA08848@kali>

Hi, all!

Heard NA4G and K4MSG and a 2-lander and a VE-lander
on 3579R5 last night...tried to answer with the
Challenger but I guess nobody heard me. I may try
again tonight so listen for
DE KA1GTT

I was using the 75A-3 and boy did I miss the
Q-mult on the Drake 2-B. I don't know about you
glowbuggers but this ol' boy gets a lot of
TV hash. Some neighbor of mine spent 0300-0400Z
channel surfing! Brnnnnnnnzrbbbbbbnnnnnnnbzzzzzztrnnnnnn...
Modulating the QRM as he flipped channels, with a
chirp every time to boot. Made tough copy
except for Bob's 813 rig of course. Anyway, I
give 3579 a thumbs-down for that reason but will
continue giving it the old college try. My
antenna is dismal, though.

Speaking of Challengers, what is the cabinet supposed
to be? I have a maroon one and a black one, and a
friend of mine also has a factory-looking black one.

73,
--Andy
wallace@mc.com
KA1GTT in MA

Date: Thu, 04 Apr 1996 15:39:00 -0500 (EST)
From: "Joel R. Hallas 716-223-4153" <HALLAS.JR@a1.rit.edu>
To: "glowbugs@theporch.com" <glowbugs@theporch.com>
Subject: RE: K1JJ's QRP-AM net on Sundays
Message-ID: <01I355HP659GA23F7L@a1gate.rit.edu>

> The QRP am net sounds like a great idea, unfortunately the time
> puts it in conflict with another group with similar interests! The
> Antique Wireless Assn. (AWA) has an am net at 4 pm on Sundays on
> 3837 Kc in which most folk are using vintage gear. A fair number
> use home-brew 20s/30s vintage QRP replicas (would you believe
> modulated osc!) and it seems a shame to have the two group's nets
> opposite each other.

Perhaps as part of the shift in hours for the summer, the QRP net could land on a different time slot?

73 Joel, W1ZR/2 JRHIEE@RIT.EDU

Date: Thu, 04 Apr 1996 12:26:01 -0600
From: Richard Biddle <rbiddle@madvax.mo.ti.com>
To: glowbugs <glowbugs@theporch.com>
Subject: Re: Sweep tube stories
Message-ID: <31641439.35FB@madvax.mo.ti.com>

In the seventies I worked for a commercial radio shop as a bench service tech. Being a young whipper snapper, I didn't even bat an eye when the owner decided he could make a lot of bucks off of the CB crazies.

The biggest money makers were the sweep tube amps. Of course we never sold any such things to CBers nor did we repair them for CBers. They were, of course, designed for the amateur market (40 to 10 meters) and no one would ever think of moving the 10 meter coil tap to allow illegal 11 meter operation. And to coin an old phrase, "There's gold in them there hills."

We could always count on a half dozen regular customers to bring their "footwarmer" in for an overhaul each month. Usually this consisted of replacing all the sweep tubes and assorted fried parasitic chokes and an occasional relay. With a 160% markup on tubes and $25/hour on labor, each one put a good $100 in the owner's pocket. I still remember one customer who had an amp with a dozen sweep tubes. His handle was "Smokey Joe". I figured he got the handle based on the way he ran his equipment.

Ahhh the good old days :)

--
73 de Richard, KB5WLH << The Internet - CB Radio >>
rbiddle@madvax.mo.ti.com << For The Nineties >>

Date: Thu, 4 Apr 1996 14:41:51 -0500 (EST)
From: rdkeys@csemail.cropsci.ncsu.edu
To: wallace@mc.com
Cc: rdkeys@csemail.cropsci.ncsu.edu (), glowbugs@theporch.com
Subject: Re: Colorbursting my balloon!

Message-ID: <9604041941.AA104502@csemail.cropsci.ncsu.edu>

>
> Hi, all!
>
> Heard NA4G and K4MSG and a 2-lander and a VE-lander
> on 3579R5 last night...tried to answer with the
> Challenger but I guess nobody heard me. I may try
> again tonight so listen for
> DE KA1GTT

NOTE: the BA/GB ``net'' is mostly a loose roundtable and not a formal
net although some net procedures are more or less followed.

I periodically call for new checkins as the roundtable progresses.
If you are having trouble getting in, try between ops to use the standard
DE prosign to let us know you are there. IFF that does not work, hold
the key down for 3 to 5 long dashes of about 1 second on one second off.
That should gather our attention, even under the worst conditions.

Usual practice in commercial circles or amongst the CW dogs I run with
is to send a single dit or a DE prosign, and that will cause the control
station to call for whomever is there by replying DE or sometimes DE IMI.
That is the clear signal that you are invited to check in.

IF the control or current station does not hear you, the next in line
should QSP your checkin to the control or the group.

IFF all else fails go the long dash route.

> I was using the 75A-3 and boy did I miss the
> Q-mult on the Drake 2-B. I don't know about you
> glowbuggers but this ol' boy gets a lot of
> TV hash. Some neighbor of mine spent 0300-0400Z
> channel surfing! Brnnnnnnnzrbbbbbbnnnnnnnbzzzzzztrnnnnnn...
> Modulating the QRM as he flipped channels, with a
> chirp every time to boot. Made tough copy
> except for Bob's 813 rig of course. Anyway, I
> give 3579 a thumbs-down for that reason but will
> continue giving it the old college try. My
> antenna is dismal, though.

The TV hash is a problem, but try to use relatively narrow filters if you
have them or, like I do, set the regeneration on the ragged edge and it
will clip out some of the hash. It is not too bad usually. I have not
had much problem with channel surfers, since I am the surfer in the family.

The later at night the BA/GB ``net'' goes, the better is the noise factor.

After midnight EST it is usually quite free even from TV hash.

> 73,
> --Andy
> wallace@mc.com
> KA1GTT in MA

Nice to have you aboard for the watch, Andy..... See you this weekend.

DE NA4G UP

Date: Thu, 4 Apr 1996 19:59:34 -0500 (EST)
From: "Barry L. Ornitz" <u856010@eastman.com>
To: glowbugs@theporch.com
Subject: Parallel or Push-Pull, RF Distortion
Message-ID: <Pine.ULT.3.91.960404190539.8916C-100000@dua150.kpt.emn.com>

Mike Silva, KK6GM, asked me to elaborate:

> Barry, could you talk a little more about why the single tube is
> better, and why the exception for push-pull (just the even-harmonic
> cancelling, or is there more?).

The problem with tubes in parallel is that they can never be perfectly matched. One tube will always be operating on a slightly different part of its dynamic characteristics than the other. This leads to subtle differences in how the combined waveform varies from the input signal. In Class B or even AB2, the tubes begin conduction at slightly different times, adding a very slight additional kink in the overall transfer characteristics. Since power tubes like 3-500's are rarely matched very well, this problem can often be seen. [For some strange reason, we tend to try to match the sweep tubes and 6146's of many rigs but we forget about the big bottles. Perhaps this is because mismatch in 3-500's is less likely to result in immediate tube destruction or because we can often adjust the idling current of each tube independently. Remember this adjustment results in the tubes being matched at only the quiescent conditions.]

Modern tubes like the 8877/3CX1500B, 5CX1500, etc. are designed for exceptionally low intermodulation distortion. Values of 35 and 42 dB down for 3rd and 5th order intermod respectively are often not impossible. Very few exciters can even come close to this.

But then Bill Orr measured the intermod with some sweep tubes and found it to be only 22 dB or so down on 3rd order! [The 6146 is better.] With

Swans and other sweep tube rigs having such high intermod already, you would likely never notice the additional caused by the "linear" amplifier. Collins used RF feedback in many of their rigs to minimize distortion.

As Mike points out, push-pull operation naturally cancels much of the even order distortion. But since this occurs at harmonics of the input frequency, the normal output coupling network is adequate to suppress these.

However there is another point to bring out. We normally think of single ended Class B stages at RF since the tuned circuits supply the missing half of the cycle. Two tubes in push-pull at RF will deliver twice the power output of a single tube, exactly the same as two paralleled tubes. BUT, only one tube is turned on in each half-cycle with push-pull. The second tube is turned on during the alternate half-cycles. The result is naturally twice the power output, but the "double kink" and other distortion found with parallel tubes is not there. I do not have any data on this with me in the office, but I seem to remember you can achieve a few decibels improvement in the distortion products this way.

Harmonic output of push-pull is naturally less too, but designing input and output networks for push-pull is much more difficult with multiband operation than with single-ended designs. You also have to consider the need for higher operating voltages and impedances in components for push-pull stages.

Most of this is not too important to the average ham, but for anyone considering building his ultimate final amplifier (the final final), look at using one big, low-distortion tube. Since many of the newer, low-distortion tubes have high power sensitivity, excess drive power can be absorbed with the proper amount of RF feedback which also reduces distortion. Of course, if you plan to use a speech-processed rice box as the driver - who cares about intermod and fidelity anyway? :-)

73, Barry L. Ornitz WA4VZQ ornitz@eastman.com

Speaking of BIG bottles, I have 5 new LaRose 6-1 triodes built by Varian/Eimac for use in LaRose's industrial dielectric heaters and sealers. These are basically ruggedized 3CX10,000A3 tubes with a slightly improved (for industrial use) coaxial filament connection. According to the Eimac literature, 20 KW PEP output is possible with a single one of these. If the blasted things did not consume close to a kilowatt to light the filaments, one of these could do wonders on 160 in Boatanchor Bob's Hartley circuit. After all, the dielectric sealers were self-excited power oscillators too! Let's see, if I skip the plate transformer and tap directly into the high-tension line running down the street and let the tube run with raw AC...? But then I would have to replace my antenna wire with something bigger... Naw, forget it Bob!

Friday comes on Thursday this week..... Have a good one, folks.

End of GLOWBUGS Digest 151
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